Listing of Claims:

1. (amended) An inorganic matrix composition comprising the reaction product of an alkali silicate and/or alkali silicate precursors derived from alkali hydroxides or oxides and a silica source ~~precursors~~, a reactive glass, water, and optionally a clay and/or oxide filler.

2. (original) The composition of claim 1, wherein the alkali silicate is selected from potassium silicate solutions and/or sodium silicate solutions.

3. (original) The composition of claim 1, wherein the alkali silicate is crystalline and/or amorphous sodium silicate and/or potassium silicate.

4. (cancelled) The composition of claim 1 wherein the alkali silicate precursors are alkali hydroxides and/or oxides and a SiO_2 source.

5. (amended) The composition of claim 1 wherein the SiO_2 source is an amorphous or crystalline SiO_2 form, selected from the group consisting of silica, silica fume, ~~microslica~~microsilica, precipitated silica, sand, quartz, quartz flour, silica gels, fumed silica and colloidal silica.

6. (original) The composition of claim 1 wherein the alkali hydroxide is selected from the group consisting of potassium hydroxide and sodium hydroxide.

7. (amended) The composition of claim 1 wherein the alkali silicate and/or alkali silicate precursors has a SiO_2/A_2O ratio of about 2.0:1.0 to 20.0:1.0, where A is potassium ~~K (potassium)~~ and/or sodium~~Na (sodium)~~.

8. (amended) The composition of claim 1, wherein said reactive glass is acidic ~~(pH< about 7)~~ and selected from the group of consisting of phosphate glasses, borate glasses and sulfate glasses.

9. (original) The composition of claim 1, wherein the reactive glass is a phosphate glass.

10. (original) The composition of claim 1, wherein the reactive glass is selected from the group consisting of ultraphosphate glasses, borophosphate glasses, silicophosphate glasses, aluminophosphate glasses and mixtures thereof.

11. (original) The composition of claim 1, wherein the reactive glass is an alkali borophosphate glass.

12. (original) The composition of claim 1, wherein the reactive glass is an acidic alkali borophosphate glass.

13. (original) The composition of claim 1, wherein the glass comprises the following formula:

$$\prod_{k=1}^{n} ((M^{p+})_{q'})(E^{q-})_{p'})_{r_k} \text{ where } \Sigma r_k = 1$$

where **M** comprises at least one glass former and at least one metallic glass modifier, **E** is an oxygen, chalcogenide and/or a halogen atom, **p** is the cation valence of **M**, **q** is the anion valence of **E**, **q'** is number of **M** cations contained in a network unit, **p'** is number of **E** anions contained in a network unit, **r** is the molar fraction of that network unit, and **n** is the number of network units or building blocks and ranges from 2 to about 30.

14. (original) The composition of claim 13 wherein the glass former is selected from the group consisting of boron, silicon, phosphorus, sulfur, germanium, arsenic, antimony, aluminum,

and vanadium, and the metallic glass modifier is at least one composition which functions as a flux, selected from the group consisting of lithium, sodium, potassium, rubidium and cesium, and, optionally, a network modifier, selected from the group consisting of vanadium, aluminum, titanium, chromium, manganese, iron, cobalt, nickel, copper, mercury, zinc, thulium, lead, zirconium, lanthanum, cerium, praseodymium, neodymium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, actinium, thorium, uranium, yttrium, gallium, magnesium, calcium, strontium, barium, tin, bismuth, and cadmium

15. (original) The composition of claim 13 wherein **E** is selected from the group consisting of oxygen, chalcogenides, halogens, and mixtures thereof.

16. (original) The composition of claim 13 wherein **E** is selected from the group consisting of oxygen, sulfur, selenium, tellurium, fluorine, and mixtures thereof.

17. (original) The composition of claim 13 wherein **M** is at least one glass former selected from the group consisting of boron, silicon, phosphorus, sulfur, and at least one metallic glass modifier, selected from the group consisting of vanadium, titanium, zinc, lead, aluminum, zirconium, lanthanum, cerium, neodymium, magnesium, calcium, strontium, barium, lithium, sodium, potassium, rubidium and cesium atoms, and mixtures thereof, and **E** is an oxygen atom.

18. (original) The composition of claim 1 wherein the reactive glass composition comprises the following formula:

$$a(A'_2O)_x\, b(G_fO)_y\, c(A''O)_z$$

where **A'** represents at least one alkali metal glass modifiers, which functions as a fluxing agent, G_f represents at least one glass formers, **A"** represents, optionally, at least one glass network modifier, **a** represents the number of fluxing agents present and ranges from 1 to 5, **b** represents the number of glass formers present and ranges from 1 to 10, **c** represents the number of glass network

modifiers and ranges from 0 to about 30, **x** represents the mole fraction of fluxing agent and is between about 0.050 and about 0.150, **y** represents the mole fraction of glass former and is between about 0.200 and about 0.950, **z** represents the mole fraction of glass network modifiers and is between about 0.000 and about 0.500, $x + y + z = 1$, and $x < y$.

19. (original) The composition of claim 18 wherein **A'** is selected from the group consisting of lithium, sodium, potassium, rubidium, and cesium.

20. (original) The composition of claim 18 wherein G_f is selected from the group consisting of boron, silicon, phosphorus, sulfur, germanium, arsenic, antimony, aluminum and vanadium.

21. (original) The composition of claim 18 wherein **A"O** is selected from the group consisting of vanadium oxide, titanium oxide, zinc oxide, lead oxide, aluminum oxide, zirconium oxide, lanthanum oxide, cerium oxide, neodymium oxide, magnesium oxide, calcium oxide, strontium oxide, barium oxide, and silicon oxide.

22. (original) The composition of claim 18 wherein **A"O** is at least one metallic glass modifier.

23. (original) The composition of claim 18 wherein **A"O** is at least two glass modifiers.

24. (original) The composition of claim 18 wherein **a** is 1, **b** is 2, and **c** is 1.

25. (original) The composition of claim 18 wherein **a** is 1, **b** is 2 and **c** is 2, and **A'** is Li, G_fO is P_2O_5 and B_2O_3, and **A"O** is MgO and BaO.

26. (original) The composition of claim 1 wherein the reactive glass composition comprises the following formula:

$$(Li_2O)_x(P_2O_5)_{y1}(B_2O_3)_{y2}c(A''O)_z,$$

wherein **A"O** is at least one metallic glass modifiers, **c** is between 1 and 30, **x** is between about 0.050 and 0.500, y_1 is between about 0.200 and 0.800, y_2 is between about 0.010 and 0.150, **z** is between about 0.010 and 0.300, and $x + y_1 + y_2 + z = 1$.

27. (original) The composition of claim 18 wherein **A"O** is selected from the group consisting of magnesium oxide, barium oxide, zinc oxide, silicon oxide, and aluminum oxide.

28. (original) The composition of claim 1, wherein the filler comprises at least one oxide selected from the group consisting of oxides of boron, aluminum, silicon, zinc, gallium, titanium, zirconium, manganese, iron, molybdenum, tungsten, bismuth, lead, lanthanum, cerium, neodymium, yttrium, calcium, magnesium and barium.

29. (original) The composition of claim 1 wherein the clay filler comprises kaolin, calcined kaolin, mica, vermiculite and/or metakaolin.

30. (original) The composition of claim 1, wherein said alkali silicate and/or alkali silicate precursors are present in an amount between about 30 wt. % and 90 wt. % based upon the total composition.

31. (original) The composition of claim 1, wherein said alkali silicate is formed from a alkali hydroxide and a SiO_2 source and said alkali hydroxide is present in an amount of between about 3 wt. % to about 40 wt. % and said SiO_2 source is present in an amount of about 15 wt. % to about 75 wt. % based upon the total composition weight.

32. (original) The composition of claim 1, wherein said reactive glass is present in an amount of between about 0.01 wt. % and about 60 wt. % based upon the total composition.

33. (original) The composition of claim 8, wherein said reactive acidic glass is present in an amount of between about 0.01 wt. % and about 60 wt. % based upon the total composition.

34. (original) The composition of claim 1, wherein said reactive glass is present in an $G:SiO_2$ ratio of between about 0.01 and about 50.0.

35. (original) The composition of claim 8, wherein said reactive acidic glass is present in an $G:SiO_2$ ratio of between about 0.01 and about 50.0.

36. (original) The composition of claim 1, wherein said clay filler is present in an amount of between about 0.0 wt. % and about 20 wt. % based upon the total composition weight.

37. (original) The composition of claim 1, wherein said oxide filler is present in an amount of between about 0.0 wt. % and about 20 wt. % based upon the total composition weight.

38. (original) The composition of claim 1 comprises the reaction product of the following:

a) 30 to 85 wt. % of at least one alkali silicate;

b) 0.01 to 60 wt. % of at least one reactive glass;

c) 0 to 20 wt. % of at least one clay filler;

d) 0 to 20 wt. % of at least one oxide; and

e) 15 to 60 wt. % of water.

39. (original) The composition of claim 1 comprises the reaction product of the following:

a) 30 to 85 wt. % of at least one silicate or alkali silicate precursor;

b) 0.01 to 60 wt. % of at least one reactive glass;

c) 0 to 20 wt. % of at least one clay filler;

d) 0 to 20 wt. % of at least one oxide; and

e) 15 to 60 wt. % of water.

40. (original) The composition of claim 1 comprises the reaction product of the following:

a) 15 to 75 wt. % of at least one SiO_2 source;

b) 3 to 40 wt. % of at least one alkali hydroxide;

c) 0.01 to 60 wt. % of at least one reactive glass;

d) 0 to 20 wt. % of at least one clay filler;

e) 0 to 20 wt. % of at least one oxide; and

f) 15 to 75 wt. % of water.

41. (original) A composition comprising the reaction product of water and the following mixture:

a) 20 to 99.9 wt. % of at least one alkali silicate;

b) 0.01 to 80 wt. % of at least one reactive glass;

c) 0 to 20 wt. % of at least one clay filler; and

d) 0 to 20 wt. % of at least one oxide.

42. (original) A composition comprising the reaction product of water and the following mixture:

a) 20 to 99.9 wt. % of at least one alkali silicate or alkali silicate precursor;

b) 0.01 to 80 wt. % of at least one reactive glass;

c) 0 to 20 wt. % of at least one clay filler; and

d) 0 to 20 wt. % of at least one oxide.

43. (original) A composition comprising the reaction product of water and the following mixture:

a) 20 to 75 wt. % of at least one SiO_2 source;

b) 5 to 40 wt. % of at least one alkali hydroxide;

c) 0.01 to 75 wt. % of at least one reactive glass;

d) 0 to 20 wt. % of at least one clay filler; and

e) 0 to 20 wt. % of at least one oxide.

44. (original) The composition of claim 1 further includes non-clay filler materials.

45. (amended) The composition of claim 44, wherein the non-clay filler materials are selected from the group consisting of fibers, spheres, ~~regular particles, and irregular~~ particles.

46. (original) The composition of claim 45, wherein the fibers are selected from a group consisting of continuous fibers and discontinuous fibers.

47. (original) The composition of claim 45, wherein the spheres are selected from the group consisting of microspheres, macrospheres, hollow spheres, and solid spheres comprising glass, ceramic, metal, mineral, organic or inorganic materials.

48. (original) The composition of claim 45, wherein the filler materials are utilized for reinforcement and selected from the group consisting of carbon fibers, glass fibers, alkali resistant glass fibers, mineral fibers, organic fibers, ceramic fibers and metallic fibers.

49. (amended) The composition of claim 45, wherein the reinforcement materials are selected from the group consisting of graphite fibers, E-glass fibers, S-glass fibers, basalt fibers, stainless steel fibers, titanium fibers, nickel alloy fibers, aramid fibers, polyethylene fibers, silicon carbide ~~(SiC)~~ fibers and boron nitride ~~(BN)~~ fibers.

50. (amended) The inorganic matrix composition made from the composition of claim 1 and

formed by curing the composition at a temperature ranging from about 15°C to 1000°C and higher~~(and higher)~~ and a pressure range from vacuum at about ambient to 10^{-3} torr~~(at about ambient to 10^{-3} torr)~~, and/or external pressure from ambient to about 20,000 psi.

51. (amended) The inorganic matrix composition of claim 50 formed by curing the composition at about 15°C to about 200°C and an external pressure from ambient to 200 psi and, alternatively, under vacuum at about ambient to 10^{-3} torr ~~(at about ambient to 10^{-3} torr)~~.

52. (original) A method of making an inorganic silicate composite comprising the steps of applying an aqueous slurry of a mixture of an alkali silicate, a reactive glass, water, and, optionally, a clay and/or oxide filler to a reinforcing medium and curing the composite by applying heat at a temperature of about 15° C up to 1000°C and a pressure range from a vacuum from about ambient to 10^{-3} torr, and/or external pressure from about ambient to about 20,000 psi.

53. (original) The method of claim 52 wherein the uncured composite is in form of bulk molding compound, sheet molding compound, powder and reinforcement, liquid and reinforcement or prepreg.

54. (original) The method of claim 52 wherein the composite is cured preferably at a temperature of about 15°C up to about 200°C and an external pressure from ambient to 200 psi, and optionally under a vacuum from about ambient to about 10^{-3} torr.

55. (original) The method of claim 52 wherein the composite is cured using processes which include compression molding, pultrusion, wet layup, filament winding, autoclave vacuum bag processing, non-autoclave vacuum bag processing, vacuum infusion, liquid resin, film infusion or powder infusion, resin transfer molding, extrusion, injection molding, casting, spin casting, trapped elastomer molding and like processes.

56. (original) The method of claim 52 wherein the composite is consolidated before and/or during the curing process.

57. (original) The method of claim 52 wherein the slurry includes additional filler materials selected from the group consisting of carbon fibers, glass fibers, alkali resistant fibers, organic fibers, ceramic fibers, mineral fibers and metallic fibers.

58. (original) The method of claim 52 wherein the slurry includes additional filler materials selected from the group consisting of graphite fibers, E-glass fibers, S-glass fibers, stainless steel fibers, titanium fibers, nickel alloy fibers, aramid fibers, polyethylene fibers, basalt fibers, SiC fibers and BN fibers.

59. (original) The method of claim 52 wherein the reinforcing medium is a glass fiber such as an E-glass fiber, S-glass fiber and/or an alkaline resistant fiber.

60. (original) An alkali silicate slurry composition for forming an inorganic polymer network comprising an alkali silicate or a mixture that yields an insitu alkali silicate, a reactive acidic glass, water and optionally a modifier that moderates the gelation of matrix binder suspension and/or a clay and/or oxide filler to enhance physical and thermal properties.

61. (original) The composition of claim 60, wherein the gel modifier is an organic acid or organic base.

62. (original) The composition of claim 60, wherein said organic acid is an α-hydroxyacid and/or a β–hydroxyacid.

63. (original) The composition of claim 60, wherein said organic base is substituted nitrogen organic base.

64. (original) The composition of claim 60, wherein said organic base is a substituted pyridine.

65. (original) The composition of claim 60, wherein said organic base is quinoline.

66. (original) The composition of claim 60, wherein said gel modifier is present in an amount of between about 0.0 wt. % and about 10 wt. % based upon the total composition.

67. (original) A method of making an inorganic silicate composite comprising the steps of applying an aqueous slurry of a mixture of an alkali silicate, a reactive acidic glass, water and optionally a modifier that moderates the gelation of matrix binder suspension and/or a clay and/or oxide filler to a reinforcing medium and curing the composite by applying heat at a temperature of about 15° C up to about 1000°C and pressures under vacuum (ambient to 10^{-3} torr, e.g. vacuum bagging) and/or external pressure from ambient to about 20,000 psi.

68. (original) The method of claim 67 wherein the slurry further includes a surface-active agent.

69. (original) The method of claim 67 wherein the slurry further includes an anionic, cationic and/or a nonionic surface-active agent.

70. (original) The method of claim 67 wherein the slurry further includes a surface-active agent selected from the group consisting of alkylaryl sulfonates, silicones, quaternary ammonium salts, protonated organoamine salts, and combinations thereof.

71. (original) The method of claim 67 wherein the slurry further includes a surface-active agent in an amount from none to 10 wt. % based upon the weight of the total composition.

72. (original) The method of claim 67 wherein the slurry further includes a surface-active agent in an amount from 0.5 wt. % to 5 wt. %. based upon the weight of the total composition.

73. (original) A glass comprising the following formula:

$$\prod_{k=1}^{n} ((M^{p+})_{q'})(E^{q-})_{p'})_{r_k} \text{ where } \Sigma r_k = 1$$

where **M** is at least one glass former and at least one metallic glass modifier, **E** is an oxygen, chalcogenide and/or a halogen atom, **p** is the cation valence of **M**, **q** is the anion valence of **E**, **q'** is number of **M** cations contained in a network unit, **p'** is number of **E** anions contained in a network unit, **r** is the molar fraction of that network unit, and **n** is the number of network units or building blocks and ranges from 2 to about 20.

74. (original) The glass of claim 73 wherein the glass former selected from the group consisting of boron, silicon, phosphorus, sulfur, germanium, arsenic, antimony, aluminum, and vanadium, and the metallic glass modifier is at least one composition which functions as a flux, selected from the group consisting of lithium, sodium, potassium, rubidium and cesium, and, optionally, a network modifier, selected from the group consisting of vanadium, aluminum, titanium, chromium, manganese, iron, cobalt, nickel, copper, mercury, zinc, thulium, lead, zirconium, lanthanum, cerium, praseodymium, neodymium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, actinium, thorium, uranium, yttrium, gallium, magnesium, calcium, strontium, barium, tin, bismuth, and cadmium

75. (original) The glass of claim 73 wherein **E** is selected from the group consisting of oxygen, chalcogenides, fluorine, and mixtures thereof.

76. (original) The glass of claim 73 wherein the glass former is selected from the group consisting of boron, silicon, phosphorus, sulfur and the metallic glass modifier is selected from the group consisting of vanadium, tin, titanium, zinc, lead, aluminum, zirconium, lanthanum, cerium, neodymium, magnesium, calcium, strontium, barium, lithium, sodium, and potassium atoms, and **E** is an oxygen atom.

77. (original) A glass comprising the following formula:

$$a(A'_2O)_x\, b(G_fO)_y\, c(A''O)_z$$

where **A'** represents at least one alkali metal glass modifiers, which function as a fluxing agent, G_f represents at least one glass formers, **A"** represents, optionally, at least one glass network modifier, **a** represents the number of fluxing agents present and ranges from 1 to 5, **b** represents the number of glass formers present and ranges from 1 to 10, **c** represents the number of glass network modifiers and ranges from 0 to about 30, **x** represents the mole fraction of fluxing agent and is between about 0.050 and about 0.150, **y** represents the mole fraction of glass former and is between about 0.200 and about 0.950, **z** represents the mole fraction of glass network modifiers and is between about 0.000 and about 0.500, $x + y + z = 1$, and $x < y$.

78. (original) The composition of claim 77 wherein **A'** is selected from the group consisting of lithium, sodium, potassium, rubidium, and cesium.

79. (original) The glass of claim 77 wherein G_f is selected from the group consisting of boron, silicon, phosphorus, sulfur, germanium, arsenic, antimony, aluminum and vanadium.

80. (original) The glass of claim 77 wherein **A"O** is selected from the group consisting of vanadium oxide, titanium oxide, zinc oxide, lead oxide, aluminum oxide, zirconium oxide, lanthanum oxide, cerium oxide, neodymium oxide, magnesium oxide, calcium oxide, strontium oxide, barium oxide, and silicon oxide.

81. (original) The glass of claim 77 wherein **A"O** is at least one metallic glass modifier.

82. (original) The glass of claim 77 wherein **A"O** is at least two glass modifiers.

83. (original) The glass of claim 77 wherein **a** is 1, **b** is 2, and **c** is 1.

84. (original) The glass of claim 77 wherein **a** is 1, **b** is 2 and **c** is 2, and **A'** is Li, $\mathbf{G_fO}$ is P_2O_5 and B_2O_3, and **A"O** is MgO and BaO.

85. (original) The glass of claim 77 wherein the reactive glass composition comprises the following formula:

$$(Li_2O)_x(P_2O_5)_{y1}(B_2O_3)_{y2}c(A"O)_z,$$

wherein **A"O** is at least one metallic glass modifiers, **c** is between 1 and 30, **x** is between about 0.050 and 0.500, y_1 is between about 0.200 and 0.800, y_2 is between about 0.010 and 0.150, **z** is between about 0.010 and 0.300, and $x + y_1 + y_2 + z = 1$.

86. (original) The composition of claim 85 wherein **A"O** is selected from the group consisting of magnesium oxide, barium oxide, zinc oxide, silicon oxide, and aluminum oxide.